

# Notice of Allowability

Application No.

10/500,638

Examiner

Hal I. Kaplan

Applicant(s)

WESTCOTT, ANDREW

Art Unit

2836

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendments dated October 25, 2007.
2. ☒ The allowed claim(s) is/are 3-7,9-18,20-26 and 32.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 10/25/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 3-7, 9-18, 20-26, and 32 allowed.
2. The following is an examiner's statement of reasons for allowance:

Claims 3-4 are allowed because none of the prior art of record discloses or suggests the step of increasing the first determined width by an amount that is equal in magnitude to the second determined width but compensatory in effect in that a voltage pulse at the output of +Vs or -Vs resulting from the pulse in the second switching signal is balanced by an equal width of voltage pulse at the output of -Vs or +Vs respectively resulting from the increased first determined width of the first switching signal, in combination with the remaining claimed features.

Claims 5-6 are allowed because none of the prior art of record discloses or suggests generating first and second switching signals, wherein at least one of the switching signals comprises a single pulse of a determined width within the period during which a desired voltage is to be supplied, wherein the determined width does not fall below a minimum pulse width, and further, wherein successive transitions between on and off states of the first or second switching signal that occur in different periods are separated in time by a minimum time interval, and wherein the determined width is such that the combination of the first and second switching signals when applied to the first and second switches respectively produce an average voltage at the output for the period that is substantially equal to the desired voltage in the period, and generating the first and second switching signals according to a rule that any pulse should be

positioned symmetrically about the centre of the period, or according to the rule that where pulses cannot be centred symmetrically, the longer and shorter sides of the asymmetric pulses are alternated between the leading edge side and the trailing edge side for successive asymmetric pulses, in combination with the remaining claimed features.

Claim 7 is allowed because none of the prior art of record discloses or suggests the step of noise shaping the first and second switching signals, in combination with the remaining claimed features.

Claims 9-11 and 15 are allowed because none of the prior art of record discloses or suggests the first or second determined pulse width being generated with reference to a voltage signal indicative of the DC supply voltage such that the determined pulse width compensates for fluctuations in the DC supply, in combination with the remaining claimed features.

Claims 12-14 are allowed because none of the prior art of record discloses or suggests either the first or second determined pulse width being generated to include an adjustment to the width of the pulse to compensate for a voltage drop across a diode and/or transistor in the bridge circuit, or an adjustment to compensate for a voltage offset caused by a slow response in generating the first or second switching signals, in combination with the remaining claimed features.

Claims 16-18 are allowed because none of the prior art of record discloses or suggests the step of receiving a current demand signal indicative of a desired current to be supplied to the output in a period and calculating the voltage demand signal

indicative of a desired voltage do be supplied to the output that results in an electrical signal being supplied to the output during the period with a current substantially equal to the desired current, in combination with the remaining claimed features.

Claims 20-26 are allowed because none of the prior art of record discloses or suggests a computer program for generating first and second switching signals, wherein at least one of the switching signals comprises a single pulse of a determined width within the period during which a desired voltage is to be supplied, wherein the determined width does not fall below a minimum pulse width, and further, wherein successive transitions between on and off states of the first or second switching signal that occur in different periods are separated in time by a minimum time interval, and wherein the determined width is such that the combination of the first and second switching signals when applied to the first and second switches respectively produce an average voltage at the output for the period that is substantially equal to the desired voltage in the period, in combination with the remaining claimed features.

Claim 32 is allowed because none of the prior art of record discloses or suggests the first switching signal comprising a pulse of the determined width within the period and the second switching signal remaining in one state throughout the period, in combination with the remaining claimed features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Response to Arguments***

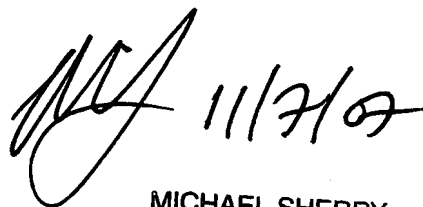
3. Applicant's arguments, see Remarks, filed October 25, 2007, with respect to the objections and rejections have been fully considered and are persuasive. The objections and rejections have been withdrawn.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal I. Kaplan whose telephone number is 571-272-8587. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
11/7/07  
MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER